

IMPEDANCE-MATCHING APPARATUS AND CONSTRUCTION FOR INTRAVASCULAR DEVICE

ABSTRACT OF THE DISCLOSURE

5 Intravascular device for matching impedances of portions of an
intravascular circuit and limiting RF signal-induced heating of
intravascular conductors. An intravascular device includes alternating
conductive and dielectric layers and an electrically conductive coil in a
configuration that effects an impedance-matching circuit. Another
10 embodiment of an intravascular device has cylindrical inner and outer
walls formed of an expandable, electrically conductive material, the
inner and outer walls being separated by a compressible dielectric
material. Varying the pressure in the lumen defined by the inner wall
changes the spacing between the inner and outer walls, thereby changing
15 the capacitance between the inner and outer wall. Another embodiment
of an intravascular device includes one or more coaxial chokes for
limiting heating caused by currents induced by RF signals. A conductive
shield of the choke is formed of a conductive polymer to further reduce
heating effects. Other embodiments include different transmission lines
20 and antenna structures.